



QC ABSTRACT

NAME OF WORK: Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
Materials						
1	Cement	Fineness by dry sieving	One Test		1	1
		Fineness by Air permeability method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
2	Coarse aggregate(40 mm down size)	Compressive Strength	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
3	Coarse aggregate(20 mm down size)	Water Absorption	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
4	Fine aggregate	Water Absorption	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
5	Steel	ReBend test	One Test		1	1
		Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
		Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	Precast (250mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	RCC(M20)	Compressive Strength(7days and 28days)	5 set /51-100 cum	73.84	10	10
9	GSB	SIEVE ANALYSIS	One Test		1	1



Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2020-12-02-04 Date: 12-10-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M N Ramaiah, No.28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-10-20
Sample Type : Birla Super 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification, IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, DETERMINATION OF DENSITY, Clause 6
Date of test : 10-10-20
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

SLNo.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.24	—
2	Finess by Air permeability method (m ² /kg.Min)	273.6	225m ² /kg, Min
3	Density (gm/cc)	3.13	—
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Authorized Signatory
Technical Manager

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2020-12-02-04 Date: 07-11-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-10-20
Sample Type : Birla Super 53 grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test : 10-10-20
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength			
SL.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.0N/mm ²	Not less than 27 N/mm ²
2	7 Days	38.5N/mm ²	Not less than 37 N/mm ²
3	28 Days	56.5N/mm ²	Not less than 53 N/mm ²

The results obtained are satisfactory as per standard requirements.

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Technical Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-12-02-04 Date: 12-10-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarchalli, Bangalore-560085
Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample condition : Satisfactory
Date of Receipt : 09-10-20
Sample Type : 40mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 09-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	374	374	2.5	97.5	90-100
3	20 mm	5728	6102	40.7	59.3	30-70
4	10 mm	4773	10875	72.5	27.5	10-35
AE-2 A.E.E	4.75 mm	3464	14339	95.6	4.4	0-5
	Pan	661	15000	100.0	0	—

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-12-02-04 Date: 12-10-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prkruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-10-20
Sample Type/ Size : 20mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 09-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
AE-2 A.E.E	40 mm	0	0	0	100	100
	20 mm	211	211	4.2	95.8	90-100
3	10 mm	2894	3105	62.1	37.9	25-55
4	4.75 mm	1698	4803	96.1	3.9	0-10
5	Pan	197	5000	100	0	-

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AE-2
A.E.E

R. Subramanian





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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2020-12-02-04 **Date:** 12-10-20

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphaltting to Roads at Prkruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 09-10-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 : 1963 (Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption

Date of test : 09-10-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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Signature
AE-02

Signature
R. Subudh





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TEST RESULTS OF STEEL

Lab ID : CP-2020-12-02-04 Date: 10-10-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prkruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-10-20
Sample Type : Sunvik
Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test: : 09-10-20

SLNo	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm ²)	(N/mm ²)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2020-12-02-04 Date: 24/10/2020

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M N Ramaiah, No.28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 19-10-20

Customer ID : Drain Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/10/2020

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Bottom Slab Concrete	M20	17/10/2020	24/10/2020	151.66 X 149.15 X 150.98	22619	8.585	415.9	18.4	18.5
2	Drain Bottom Slab Concrete	M20	17/10/2020	24/10/2020	150.12 X 151.40 X 151.37	22728	8.530	422.1	18.6	
3	Drain Bottom Slab Concrete	M20	17/10/2020	24/10/2020	150.14 X 149.12 X 150.52	22389	8.746	414.4	18.5	

The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 27/10/2020

Lab ID : CP-2020-12-02-04
 Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
 Address : Yelahanka Sub Division, BBMP, Bangalore.
 Project Name : Improvements and Asphalting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
 Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
 Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 22-10-20
 Customer ID : Drain Side Wall Concrete
 Sample Type /Size : 150X150X150 mm
 Sample grade/Age : M20 / 7 Days Compressive Strength
 Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
 Date of test : 27/10/2020

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	149.72 X 150.27 X 149.24	22498	8.585	407.1	18.1	18.4
2	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	150.18 X 151.34 X 151.57	22728	8.530	410.2	18.0	
3	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	150.88 X 149.07 X 150.58	22492	8.746	425.9	18.9	

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
Technical Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2020-12-02-04 Date: 27/10/2020

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphalting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 22-10-20

Customer ID : Drain Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 27/10/2020

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	150.04 X 151.20 X 150.78	22687	8.585	420.3	18.5	18.6
2	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	151.76 X 149.20 X 150.56	22644	8.530	420.9	18.6	
3	Drain Side Wall Concrete	M20	20/10/2020	27/10/2020	150.87 X 149.80 X 151.13	22601	8.746	422.9	18.7	

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Authorized Signatory
Technical Manager



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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2020-12-02-04 Date: 04/11/2020

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M N Ramaih, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 30-10-20

Customer ID : Culvert Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete C15

Date of test : 04/11/2020

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Culvert Side Wall Concrete	M20	28/10/2020	04/11/2020	151.96 X 151.89 X 150.20	23081	8.585	424.6	18.4	18.5
2	Culvert Side Wall Concrete	M20	28/10/2020	04/11/2020	151.79 X 149.93 X 151.22	22757	8.530	421.3	18.5	
3	Culvert Side Wall Concrete	M20	28/10/2020	04/11/2020	151.01 X 149.38 X 149.88	22558	8.746	419.8	18.6	

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Technical Manager

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TEST REPORT OF PRECAST COVER SLAB

Lab ID : CP-2020-12-02-04 Date: 23-10-20

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M N Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 19-10-20

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 19/10/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm ²)	(N/mm ²)	(N/mm ²)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

* The results obtained are satisfactory as per standard requirements.

Note:

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A.E.E. *[Signature]* AE-2



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Authorized Signatory
Technical Manager

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****End of Report****



TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2020-12-02-04 Date: 27-10-20
 Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
 Address : Yelahanka Sub Division, BBMP, Bangalore.
 Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
 Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
 Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 24-10-20
 Type of Mix : WMM (Wet Mix Macadam)
 Date of test : 24-10-20
 Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements.

Note:-

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Technical Manager



DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2020-12-02-04 Date: 27-10-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 24-10-20
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 24-10-20

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

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R RUDRAPRASAD
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Technical Manager



TEST RESULTS OF GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2020-12-02-04 Date: 04-11-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 02-11-20
Type of Mix : DBM-Plant (Dense Bituminous Macadam)
Date of test : 02-11-20
Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

* The results obtained are satisfactory as per standard requirements.

Note:-

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2020-12-02-04 Date: 05-11-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarchalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 02-11-20
Type of Mix : DBM (Dense Bituminous Macadam)
Date of test : 02-11-20

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	-

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2020-12-02-04 Date: 18-11-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Date of Receipt : 17-11-20
Type of Mix : DBM (Dense Bituminous Macadam)
Date of test : 17-11-20

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	475	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.8	4.8
4	Average percentage	%	4.8	

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TEST REPORT ON BITUMEN

Lab ID : CP-RW-2020-12-02-04 Date: 30-10-20

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division

Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085

Customer's Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 28-10-20

Sample Type : Bitumen

Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)

Date of test : 28-10-20

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C, in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

* The results obtained are satisfactory as per standard requirements.

Note:-

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Technical Manager

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TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2020-12-02-04 Date: 11-11-20
 Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
 Address : Yelahanka Sub Division, BBMP, Bangalore.
 Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
 Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
 Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 09-11-20
 Type of Mix : BC-Plant (Bituminous Concrete)
 Date of test : 09-11-20
 Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

Note:-

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2020-12-02-04 Date: 12-11-20
 Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
 Address : Yelahanka Sub Division, BBMP, Bangalore.
 Project Name : Improvements and Asphaltting to Roads at Prkruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
 Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
 Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 09-11-20
 Type of Mix : BC (Bituminous Concrete)
 Date of test : 09-11-20

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2020-12-02-04 Date: 19-11-20
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Improvements and Asphaltting to Roads at Prakruthi Layout in Chowdeshwari Ward No-02 of Yelahanka Sub Division
Agency : Sri M n Ramaiah, No:28, 6th Main Road BSK 3rd Stage, Dathathreyanagara, Hosakarehalli, Bangalore-560085
Customer Reference : BBMP/EE/YNK.D/EPMT-01/W.O/43/2020-21
Source of Sample : Sample supplied by Agency
Date of Receipt : 18-11-20
Type of Mix : BC (Bituminous Concrete)
Date of test : 18-11-20

SLno	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	472	471
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	5.60	5.80
4	Average percentage	%	5.7	

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Lab ID : CP-RW-2020-12-02-04

Date: 19-11-20

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm)

: 472

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.7	62.3	53-71
2.36	88	266	56.4	43.6	42-58
1.18	29	295	62.5	37.5	34-48
0.6	11	306	64.8	35.2	26-38
0.3	46	352	74.6	25.4	18-28
0.15	45	397	84.1	15.9	12-20
0.075	55	452	95.8	4.2	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm)

: 471

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.8	62.2	53-71
2.36	88	266	56.5	43.5	42-58
1.18	29	295	62.6	37.4	34-48
0.6	11	306	65.0	35.0	26-38
0.3	46	352	74.7	25.3	18-28
0.15	45	397	84.3	15.7	12-20
0.075	55	452	96.0	4.0	4-10

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